

Indian Petroleum Act (VIII of 1899)

TENTH ANNUAL REPORT

OF THE

CHIEF INSPECTOR OF EXPLOSIVES IN INDIA.

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Tenth Annual Report of the Chief Inspector of Explosives, India.

No. 1067.

FROM

LIEUT.-COLONEL C. A. MUSPRATT-WILLIAMS, R.A.,
Chief Inspector of Explosives in India

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,
DEPARTMENT OF COMMERCE AND INDUSTRY.

Simla, the 17th June 1909.

SIR,

I have the honour to submit herewith a Report of the work of my Department during the year ending 31st March 1909.

2. From the 1st of March to the 6th of November 1908 Major F. G. Smallwood, M.V.O., R.A., was officiating for me while I was on furlough, and I returned from furlough and took up the duties of my appointment on the 7th of November 1908. Captain J. S. Rush, Inspector of Explosives, was granted three months' privilege leave to England from the 28th March 1908 and reported himself for work again on 28th June.

3. During the year 1908, 134 licenses (or 8 more than in the previous year) were granted in British India under Rule 17 of the rules to regulate the manufacture, possession and sale of explosives. The number of magazines licensed was 186, or 13 more than in 1907, and is in excess of the number of licenses granted, because in a number of cases firms have two or more magazines in one place under one license. A statement showing the number and location of the magazines and also the number of licenses granted in British India is given in Appendix A. It will be seen from this statement how widely dispersed these magazines are, and how in some cases they are situated in places very difficult of access, and consequently considerable time has to be spent in getting from place to place, which necessarily, to a certain extent, curtails the number of inspections that can be made during the year.

4. During the year 268 inspections of magazines were made; a number of magazines being inspected two or three times each. Those magazines are inspected most frequently which are situated in the neighbourhood of towns or in populous localities, or which contain large quantities of explosives, or any explosive, which on account of its greater susceptibility to decomposition and consequent ignition, it is considered advisable to examine and test more than other explosives. The Roburite Factory at Karachi was also inspected twice.

5. The magazines generally are in good order and as usual I have found magazine owners most willing to carry out recommendations even when involving considerable expense and my thanks are due to them for making my duties easy in this respect.

6. The physical condition of all the explosives in the different magazines during the year was found to be good with the following exceptions, which were found to have deteriorated or to have become defective and were destroyed.

- (a) 2 cases of Amberite and 3 cases Canonite from the Calcutta Port Commissioners' magazine at Moyapur.
- (b) 496 Coils of Safety Fuze in Messrs. Gillanders Arbuthnot and Company's magazine at Giridih;
- (c) 1,176 Coils of Safety Fuze from Messrs. Shaw Wallace and Company's magazine at Goondhoodi in Bengal;
- (d) 375 lbs. of Ballistite from Messrs. Best and Company's magazine at Madras;
- (e) 10 lbs. of Dynamite, a few Cartridges Gelignite and Blasting Gelatine and 1,500 Electric Detonators from Messrs. Gillanders Arbuthnot and Company's magazine at Bally;
- (f) 550 lbs. Dynamite and 1,500 Coils Safety Fuze, which had been stored for a long time in the Raipur District and for which there had been no use, and the owner asked that the explosives might be destroyed, which was carried out by this Department;
- (g) 60 lbs. Amberite from the Bombay Port Trust magazine;
- (h) a few cartridges Carbonite, Dynamite and Gelignite and 102 coils Safety Fuze from the Gaya-Katras Railway magazine at Patwas;
- (i) 106 Coils Safety Fuze and 82 Detonators from the magazine of Messrs. P. C. Dutt and Burn and Company at Imalya, Central Provinces.

7. During the year 2 cases of thefts were reported to this Department. The magazine of Messrs. Murray and Company at Lucknow was broken into in June 1908 and 50 lbs. of Amberite, 25 lbs. Diamond Smokeless Powder, 25 lbs.

No. VI black gunpowder and 21 lbs. F. F. F. Powder were stolen. The magazine of Messrs. F. F. Christien and Company at Barakura in the Hazaribagh District was reported as broken into in February last, and 150 lbs. Dynamite and 57 coils of fuze were stolen. It will be seen from my Seventh Annual Report in paragraph 7 that the same magazine has been broken into before and explosives stolen. In paragraph 7 of my Ninth Annual Report it will be seen also that the same firm had another magazine at Dhab in the same district broken into and explosives were removed, and that explosives were also taken from another firm's magazine situated in this same district. All these robberies seem to occur in the Hazaribagh district, and I am of opinion that the explosives so obtained command a ready sale amongst some of the small mine owners who will not go to the trouble or expense of taking out a license for the possession of explosives, and who prefer to buy stolen explosives at a cheaper rate than the market rate. I have made certain suggestions to the Government of India for the better control and safe guarding of magazines in general.

8. During the year under report 444 licenses for the storage of non-dangerous petroleum, regarding which this Department has been concerned or consulted, were granted. This is an increase of 33. A list of these installations, corrected up to date, and showing the districts in which they are located, is given in Appendix B. In addition, of course, there are a number of storage godowns for the possession of non-dangerous petroleum in non-bulk, licensed by District officers of which this Department has no cognizance.

9. During the year the Chief Inspector of Explosives personally visited the large bulk oil installations at Madras, Karachi, Bombay, Tuticorin, Calcutta (Budge Budge and Narculdanga), Chittagong and Rangoon and also the oil fields of Burma and Assam. He in addition inspected a number of the minor installations. In all 492 petroleum inspections were made. Thirty

dangerous petroleum godowns were also inspected by this Department during the year.

10. The large installations are usually under efficient European supervision and are in good order and well looked after. In paragraph 10 of this Department's Ninth Annual Report, it was stated that there was still one grave defect in the conception of these installations, inasmuch as there was no provision for a safety or emergency tank right away from the oil area. This opinion given by Major Smallwood I do not share, for I adhere to the decision I arrived at five years ago after due and serious consideration that it was unnecessary to insist on the provision of these emergency tanks. The petroleum rules in India lay down that in major installations the tanks shall be 100 feet apart and shall be each surrounded by an embankment capable of containing more than the contents of the tank. With these precautions I consider that, in the event of a fire breaking out in any particular tank, it should be easily localised by spraying water on the other tanks to keep them cool. The firms find it difficult enough as a rule to obtain sufficient ground for their installations, and the difficulty would be very greatly increased, if they had to provide an emergency tank right away from the oil area. The provision of a large tank, always standing empty waiting for an accident, would mean considerable expense to the oil firms. Moreover there would always be a risk in the excitement of a fire of the oil being pumped into less desirable places than the emergency tank, and there is also always a chance of leakage in a long pipe line. When I was in England I took the opportunity to consult Sir Boverton Redwood, the eminent petroleum specialist, who is the petroleum adviser to the Home Office, the India Office, and the Admiralty. He told me he considered our petroleum rules in India were practicable and quite stringent enough and gave an ample margin of safety and that the provision of emergency tanks was absolutely unnecessary. He was also good enough to say that he would corroborate this opinion if it was referred to him officially.

11. The small or minor installations are installations in which not more than 50,000 gallons of kerosine oil are stored and are looked after by native Agents, employed by the large oil firms. The oil for these installations is supplied from the major installations, and the retail trade is carried out in them. A great deal of inspection of these minor installations has been done by this Department during the last three years with the result that their condition is very much improved.

12. In Burma considerable competition has arisen in the oil fields. Messrs. Jamal Brothers of Rangoon, who have oil well sites in the Khodoung oil fields, have started a Company and have combined with Messrs. Steel Brothers of Rangoon under the name of the Indo-Burman Company. This Company has erected a refinery on the Rangoon River, and has already imported case oil into Calcutta. A retired durwan of the Burma Oil Company bought a number of sites some time ago in the Khodoung field, and a Company has been formed to exploit these sites under the name of the Nath Singh Oil Company. The Rangoon Refineries Company have very nearly completed a refinery on the Rangoon River, where I believe it is intended to refine the oil of the Nath Singh Company. I hear also that lately another large Company, the Twinzas Oil Company, has been floated. As will be seen from the increase in the number of licenses, there have been a number of new installations constructed during the year, and the number is likely to expand considerably.

13. No accidents have occurred in the magazines or in the one explosives factory (The Roburite Factory at Karachi) licensed in British India. A list of accidents that have occurred with explosives, inflammable substances, dangerous goods, etc., between the 1st January and 31st December 1908, and that have been reported to this Department, is given in Appendix C and gives a short account of each one. It will be seen from a perusal of the details that the accidents have practically all been caused by gross neglect of ordinary precautions. In all there were 98 accidents causing 93 deaths and injuries to 112 persons. Comparative

statements given in Appendices D and E show the total number of accidents and the number of persons killed or injured by them during the last five years. As stated in my previous reports, it is doubtful whether all accidents that occur are reported to this Department, and therefore it is possible that the statistics given are underestimated.

14. There were 19 gunpowder accidents during the year, causing 27 deaths and injuries to 64. This big quota of victims is due to one accident (Serial No. 9 of Appendix C) at Mymensingh, which was responsible for 17 deaths and injuries to 43 persons and which illustrates the proverbial carelessness that prevails.

Gunpowder, Class I.

15. Nitro-Compounds were responsible for 4 accidents causing 1 death and injuries to 4 persons.

Nitro Compounds, Class III.

16. Carelessness with detonators caused severe injuries to a European. (Serial No. 24 of Appendix C).

Ammunition, Class VI.

17. Twenty-two accidents from fireworks were reported to this Department, causing 26 deaths, and injuries to 23 persons. Most of the accidents are caused by the sulphur chlorate combination of fireworks which is an extremely sensitive one and which is prohibited in England.

Fireworks, Class VII.

I recommended their prohibition in India in 1899, but the Government of India after due consideration of all the points at issue decided not to prohibit these fireworks in India. The question of their prohibition is now again under the consideration of the Government of India, as this mixture has been very considerably used in bombs.

18. There were 41 accidents from petroleum during the year, which were responsible for 37 deaths and injuries to six persons. It will be seen from the details of these accidents given in Appendix C (Serial Nos. 47 to 87), that carelessness is a prominent feature in a large number of them and that they are caused usually by lights being brought into proximity to oil vapour, to kerosine lamps being upset or falling down from walls, to kerosine being poured on to fires or into burning lamps. One bad accident (Serial No. 86) causing the death of six employes occurred at one of the Assam Oil Company's flowing oil wells at Digboi. Work had been finished for the day and the well had been boxed over. The coolies were cleaning themselves preparatory to going home, and the driller in charge had gone to the boiler 164 feet away to make sure that all was safe for the night when the well suddenly blew. There was a sudden conflagration accompanied with an explosion and the men cleaning themselves were caught in it though the men at the boiler were untouched, from which it is practically certain that the fire was not occasioned by the boiler. The Manager of the Company seemed to think the fire must have been started by a spark from the boiler chimney, but I am personally inclined to think it was due to some carelessness on the part of the coolies. I submitted a special report on the accident to the Local Government concerned and made a number of recommendations, which I trust will minimize the chance of a disaster of this kind occurring again.

Petroleum.

19. Particulars were received by this Department during the year of 3 Government accidents, which were responsible for 29 deaths and injuries to 13. A very serious explosion which occurred in a building in the Dum Dum Ammunition Factory where the uncapping of Martini-Henri cartridges was being carried out, caused 28 of these deaths and 11 employes were also injured. A special departmental enquiry was held to investigate the circumstances of the explosion.

Government accidents.

20. One thousand five hundred and sixty tons of explosives were imported into British India during the year 1908, the value being Rs. 18,24,657. Full details showing the different kinds of explosives imported and the value of each are given in Appendix F. A comparative statement showing the quantity of explosives imported during the last five years is given in Appendix G.

Import of Explosives.

21. During the year under report 209,995 gallons of dangerous petroleum and 90,626,195 gallons of non-dangerous petroleum were imported by sea into British India. The details are given in Appendix H, and also the quantity of dangerous and non-dangerous petroleum produced in Assam and Burma during the year.

22. This Department has now been in existence ten years having started in September 1898 and I hope it may be considered to have justified its formation. It began somewhat humbly with the Chief Inspector of Explosives and 2 clerks and only dealt with explosives. For the first year or so the work was light as the Department was hardly known. The functions of the Department, however, soon enlarged and it had soon to deal also with all questions relating to petroleum and dangerous goods of all kinds and to carry out inspections of all petroleum installations. In fact the Department has become a bureau, from which information on all these subjects can be obtained. The establishment now consists of a Chief Inspector and two Inspectors of Explosives and 8 clerks and even with the increased establishment it is difficult to cope with the increase of work. Prior to the formation of this Department there were explosives and petroleum rules in existence, but it cannot be said that they were satisfactory, and the magazines and installations that existed under these rules were certainly in a very bad state as the local officers, who carried out the inspections, had no technical knowledge. Since then uniform rules for the whole of British India for explosives, petroleum and carbide of calcium have been issued, laying down clearly the conditions which have to be observed and allowing modifications or variations for special cases at the recommendation of the Chief Inspector of Explosives, so that the conditions are not unnecessarily rigid.

23. During the last 18 months this Department has had very onerous, unpleasant, and dangerous work to do in connection with the anarchist outrages, which started with the attempt on the 6th December 1907 to derail the special train of His Honour the Lieutenant-Governor of Bengal. In connection with these outrages, Major F. G. Smallwood, M.V.O., R.A., who was acting for me for eight months, had an extremely arduous and anxious time, and this Department is also much indebted for able assistance to Major J. A. Black, M.A., M.B., I.M.S., Chemical Examiner to the Government of Bengal, and after his departure to Captain H. Elmslie Smith, M.B., I.M.S., his *locum tenens*. Special reports have been submitted by this Department on all these outrages, but I do not consider it advisable to enter into any details in this report.

24. An amendment was made during the year to Schedule A of the rules for testing of explosives. This amendment is shown in Appendix I.

25. During the year under report it was found necessary by the Government of India, in consequence of the anarchist outrages, to introduce a new Act called the Explosives Substances Act, 1908 (VI of 1908). This is based on a similar Act in force in England, which was introduced for a similar reason.

26. A list of explosives at present authorised for importation into British India for general sale, has been published in the *Gazette of India* for information. This list is given in Appendix J.

27. The draft consolidated petroleum rules to be uniformly adopted in India, were issued by the Government of India in December 1908 to Local Government and Administrations for final issue.

28. In conclusion I would like to bring to the notice of the Government of India the excellent work done during the year by the Inspectors of Explosives, Captain J. S. Rush and Captain J. W. Turner. In addition to their ordinarily heavy duties of inspection work, they, specially Captain J. W. Turner, have been constantly called away in the middle of inspection tours to carry out investigations

in connection with anarchist outrages, and have had to resume their inspection tour afterwards. They have had extremely hard work and I cannot speak too highly of their services.

I have the honour to be,

SIR,

Your most obedient Servant,

C. A. MUSPRATT-WILLIAMS,

LIEUT.-COLONEL, R.A.,

Chief Inspector of Explosives in India.

APPENDIX A.

List of Magazines and Licenses granted under Rule 17 of the Explosives Rules for the year 1908.

Presidency or Province.	District.	MAGAZINES.			LICENSE.		
		Under renewed license.	Under new license	Total.	Renewed.	New.	Total.
BENGAL	Burdwan	22	...	22	19	...	19
	Darjeeling	3	...	3	3	...	3
	Gaya	3	...	3	3	...	3
	Hazaribagh	14	...	14	12	...	12
	Hooghly	4	...	4	1	...	1
	Howrah	...	1	1	...	1	1
	Manbhum	14	3	17	12	3	15
	24-Parganas	2	...	2	1	...	1
	Singbhum.	...	2	2	...	1	1
	TOTAL	62	6	68	51	5	56
AJMER-MERWARA	Ajmer	...	1	1	...	1	1
	TOTAL	..	1	1	..	1	1
BOMBAY	Ahmedabad	2	...	2	2	...	2
	Bombay	19	..	19	12	...	12
	Dharwar	2	..	2	1	...	1
	Karachi*	9	...	9	5	...	5
	Kolaba	...	1	1	...	1	1
	Panch Mahals	...	1	1	...	1	1
	TOTAL	32	2	34	20	2	22
BURMA	Hanthawaddy	3	...	3	2	...	2
	Mergui	1	...	1	1	...	1
	Myittha	...	1	1	...	1	1
	Ruby Mines	1	1	2	1	1	2
	TOTAL	5	2	7	4	2	6
CENTRAL PROVINCES	Balaghat	1	...	1	1	...	1
	Bilaspur	1	..	1	1	...	1
	Chindwara	1	..	1	1	...	1
	Jubbulpur	3	...	3	2	...	2
	Nagpur	3	4	7	2	2	4
	Narsingpur	2	..	2	1	...	1
	Raipur	4	...	4	4	...	4
	Saugor	1	...	1	1	...	1
	TOTAL	16	4	20	13	2	15
EASTERN BENGAL AND ASSAM	Cachar	2	...	2	1	...	1
	Lakhimpur	1	...	1	1	...	1
	TOTAL	3	...	3	2	...	2
MADRAS	Anantapur	3	...	3	2	...	2
	Chingleput	2	2	4	1	1	2
	Godavari	2	...	2	1	...	1
	Kistna	1	...	1	1	...	1
	Madras	19	...	19	5	...	5
	Nellore	4	...	4	2	...	2
	Nilgiris	2	...	2	1	...	1
	Tanjore	2	...	2	2	...	2
	Trichinopoly	2	1	3	2	1	3
	Viragapatam	5	...	5	3	...	3
	TOTAL	42	3	45	20	2	22
PUNJAB	Rawalpindi	1	...	1	1	...	1
	TOTAL	1	...	1	1	...	1
UNITED PROVINCES	Cawnpur	1	...	1	1	...	1
	Dehra Dun	1	...	1	1	...	1
	Gharwal	1	1	2	1	1	2
	Lucknow	1	...	1	1	...	1
	Meerut	1	...	1	3	...	3
	Shahjehanpur	1	...	1	1	...	1
	TOTAL	6	1	7	8	1	9
SUMMARY.							
AJMER-MERWARA		...	1	1	...	1	1
BENGAL		62	6	68	51	5	56
BOMBAY		32	2	34	20	2	22
BURMA		5	2	7	4	2	6
CENTRAL PROVINCES		16	4	20	13	2	15
EASTERN BENGAL AND ASSAM		3	..	3	2	...	2
MADRAS		42	3	45	20	2	22
PUNJAB		1	...	1	1	...	1
UNITED PROVINCES		6	1	7	8	1	9
GRAND TOTAL		167	19	186	119	15	134

At Karachi there is in addition a Roburite Factory licensed under Rule 15.

APPENDIX B.

*List of non-dangerous petroleum installations licensed during the year 1908.

Province.	District.	No	Province.	District.	No
Ajmer-Merwara	Ajmer	4	Bombay—contd.	East Khandesh	3
	TOTAL	4		West Khandesh	7
Baluchistan	Quetta	1		Nasik	5
	TOTAL	1		Poona	3
Bengal	Balasore	3		Satara	3
	Bhagulpur	7		Sholapur	3
	Birbhum	2		Surat	4
	Burdwan	7		Thana	4
	Calcutta	4		TOTAL	82
	Champaran	2	Burma	Akyab	1
	Cuttack	2		Ilanthawaddy	4
	Darbhangha	3		Magwe	7
	Darjeeling	1		Mingyin	1
	Gaya	4		Pokoku	3
	Howrah	2		Thayetmyo	1
	Khulna	1		TOTAL	17
	Manbhum	1	Central Provinces	Akola	6
	Midnapur	1		Amroati	7
	Monghyr	4		Bhindara	3
	Mozufferpur	4		Bilaspur	1
	Murshedabad	1		Buldana	8
	Nadia	4		Chanda	2
	Patna	4		Damoh	2
	Purnea	1		Hoshangabad	4
	Sambalpur	3		Jubbulpur	6
	Saran	2		Nagpur	4
	Shahabad	3		Narsingpur	3
	Sonthal Parganas	6		Nimar	5
	24-Parganas	7		Raipur	1
	TOTAL	79		Saugor	3
Bombay	Ahmedabad	6		Seoni	2
	Ahmednagar	3		Wardha	9
	Belgaum	6		TOTAL	66
	Byapur	6	Eastern Bengal and Assam	Backergunj	1
	Bombay	3		Bogra	1
	Broach	4		Chittagong	2
	Dharwar	11		Dacca	4
	Hyderabad	1		Dinajpur	3
	Karachi	6		Jalpaiguri	1

*This list includes some godowns for the storage of non-dangerous petroleum regarding which this department has cognizance.

Province.	District.	No	District	Province	No
Eastern Bengal and Assam —contd.	Lakhimpur	1	Punjab—contd.	Jullunder	1
	Mymensingh	1		Lahore	3
	Fabra	2		Ludhiana	3
	Rajshahye	2		Multan	1
	Rungpur	1		Rawal Pindi	3
	Sylhet	1		Sialkot	3
	TOTAL	21		Umballa	6
Madras	Anantapur	2	United Provinces	TOTAL	26
	Bellary	5		Agra	4
	Chingleput	3		Alligarh	1
	Coimbatore	6		Allahabad	3
	Cuddapah	2		Azamgarh	1
	Ganjam	4		Bahraich	1
	Godavery	4		Bara Banki	1
	Guntur	4		Bareilly	2
	Kistna	5		Basti	2
	Kurnool	2		Balha	1
	Madras	8		Benares	2
	Madura	6		Cawnpur	3
	Malabar	12		Etawah	1
	Nellore	4		Fyzabad	2
	North Arcot	2		Ghazipur	1
	Salem	3		Gonda	2
	South Arcot	7		Gorakhpur	2
	Tanjore	8		Jaunpur	1
	Tinnevely	6		Jhansi	3
	Trichinopoly	1		Lucknow	2
	Vizagapatam	2		Mecrut	4
	TOTAL	97		Moradabad	3
N-W Frontier Province	Peshawar	3		Muttra	1
	TOTAL	3		Shahzranpur	3
Punjab	Amritsar	3		Shahjehanpur	2
	Delhi	3		TOTAL	48

SUMMARY.

AJMER-MERWARA	4
BALUCHISTAN	1
BENGAL	79
BOMBAY	82
BURMA	17
CENTRAL PROVINCES	66
EASTERN BENGAL AND ASSAM	21
MADRAS	97
NORTH-WEST FRONTIER PROVINCE	3
PUNJAB	26
UNITED PROVINCES	48
TOTAL	444

APPENDIX C.

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1908 to 31st December 1908.

No	Date of accident	Nature of Explosive	Where accident occurred	Circumstances of accident so far as ascertained	NUMBER OF PERSONS	
					Killed.	Injured
Explosives.						
1	10th Jan. 1908	Gunpowder	Salem	The District Magistrate reported that a native had filled an iron tube with gunpowder, when the charge suddenly exploded injuring the man and another who was standing close by.	...	2
2	10th Feb. 1908	Do	Arkonam	The District Magistrate reported that an iron cylinder loaded with gunpowder was left in the verandah of a house and it is presumed that a spark of fire must have reached it which caused an explosion, bursting the cylinder. Cylinders similar to this are used for firework displays and the cylinder in question had been fired twice, but as children in the vicinity were frightened it was put away without the powder being removed.	3	2
3	15th Feb. 1908	Do.	Salem	The District Magistrate reported that some coolies had made two borings for blasting, and two of them thinking that both charges had exploded began to clear away the debris when one of the charges which did not explode at the time suddenly exploded, injuring the men severely.		2
4	29th Feb. 1908	Do.	Do.	The District Magistrate reported that in deepening a well a native was ramming a charge of gunpowder with a crowbar when the charge exploded injuring him severely.	...	1
5	16th March 1908	Do.	South Arcot	The Magistrate reported that a native wanted to test some gunpowder he had in a bag, and to do so took out a little powder from the bag and applied fire to it. Some sparks fell on the bag of powder which caused an explosion fatally injuring the man	1	...
6	22nd March 1908	Do	Salem	The District Magistrate reported that as a bomb called "out" consisting of saltpetre, sulphur and charcoal and a powder which produces red and white light did not explode, a native ignited the contents when the mixture suddenly exploded injuring three persons one of whom succumbed to his injuries.	1	
7	16th April 1908	Do.	Do	The District Magistrate reported that during a festival a native was engaged in firing Advadis (salutes from an iron tube filled with gunpowder and attached to a log of wood in the ground) and during the course of firing he held the earthen vessel containing the powder and also the lighted fuze in one hand, when a spark from the fuze ignited the powder and an explosion resulted in consequence, injuring him severely.	...	
8	1st May 1908	Do	Elephanta	The District Magistrate reported that during blasting operations a native put down a torch on the ground without warning anybody and a native lad who had bought 3 or 4 lbs. of powder in a bag unknowingly placed the bag on the smouldering torch when an explosion occurred, injuring the boy severely.		

No.	Date of accident.	Nature of Explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS	
					Killed.	Injured.
Explosives—continued.						
9	6th May 1908.	Gunpowder	Mymensingh	The Magistrate reported that a marriage procession of about 100 people being overtaken by a storm took shelter in a school house in a room in which gunpowder for fireworks, etc., was stored. One of the party lit a torch and a spark from the torch having accidentally fallen into a basket of gunpowder caused an explosion seriously injuring about 60 persons of whom 17 died.	17	43
10	18th June 1908.	Do.	Santhapuram	The Magistrate reported that two natives were manufacturing gunpowder and one of them was smoking. A spark from the cigar fell on the powder which exploded and injured both the men.	...	2
11	13th July 1908	Do.	Paparapatti, Salem	The Magistrate reported that while a native was firing a small quantity of blasting powder for blasting a well, he was severely injured and died from the effects.	1	...
12	25th July 1908	Do.	Thotavalasai, Salem.	The Magistrate reported that while two men were blasting a well one man was injured by the explosion.	...	1
13	12th Aug. 1908	Do.	Balagoundampudur, Salem,	The Magistrate reported that while "Adirivadis" loaded with gunpowder were being fired, a spark fell on some gunpowder kept at a distance in a basket and exploded it injuring two lads.	...	2
14	15th Aug. 1908	Do.	Kulasekarapatnam, Tinnevely	The Magistrate reported that while some gunpowder was being pounded, it suddenly exploded injuring two men, one of whom died subsequently. The explosion was due apparently to some grit.	1	1
15	1st Dec. 1908.	Do.	Runch, Damoh	The District Magistrate reported that a native was grinding powder on a grinding stone, when an explosion occurred, fatally injuring him.	1	...
16	20th Oct. 1908.	Do.	Salem	The Magistrate reported that a native during blasting operations placed a charge of powder and clay in a hole and rammed the charge with an iron rod. The powder exploded severely injuring him.	...	1
17	12th Nov. 1908.	Do.	Ditto.	The Magistrate reported that while a native was examining some gunpowder with the help of a naked light, the powder exploded and caused injuries to the man, who subsequently died.	1	...
18	19th Nov. 1908.	Do.	Rasipur, Salem	The District Magistrate reported that blasting was being carried out in a well and while the charge of the previous days were being examined, an unexploded charge exploded and injured two persons.	...	2
19	27th Nov. 1908	Do	Salem	The District Magistrate reported that while a well was being blasted, an explosion occurred, fatally injuring one man and seriously injuring another.	1	1
TOTAL					27	64
20	25th Feb. 1908	Dynamite	Elephanta	During blasting operations a misfire was not noticed and, when a man struck the ground with his hammer, the charge exploded.	...	1

No	Date of accident.	Nature of Explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	Killed.	Inju
Explosives—continued.						
21	13th June 1908	Dynamite	Madras	The Commissioner of Police reported that a shackle attached to the head of a crane dropped on the groyne of the Madras Harbour and caused an explosion. It was found that in breaking a dynamite cartridge on the groyne, a piece must have remained and the iron shackle falling on it caused the explosion.	...	
22	20th Oct. 1908	Gelignite	Bombay	The Commissioner of Police reported that a native was accidentally killed by a stone from a blast striking him. The deceased was about 400 yards away from where the blasting operations were being carried on and the stone which hit him weighed about 2 lbs.	1	...
23	November 1908	Dynamite and detonator.	Moulmein	The Deputy Commissioner reported that a quarry Engineer had 4 cartridges in his left hand tied together and he was making the charge ready. He made a small hole with a piece of wood in one of the cartridges to put the detonator into and inserted it. Thinking the detonator was not far enough in he pushed it further and the cartridges exploded.	...	
TOTAL					1	
24	16th Nov. 1908	Detonators	Kalagauk, Amherst.	The Deputy Commissioner reported that a European went out in a Sampan to kill fish. With a match he lit a fuse which had been inserted in a detonator, and the charge exploded in his hand before he threw it in the water with the result that his left hand was torn off, his right eye destroyed and he was severely wounded on the chest and face. The man was believed to be under the influence of liquor at the time.	...	
TOTAL					...	
25	31st Jan. 1908	Fireworks consisting of chlorate of potash and sulphate of yellow arsenic.	Calcutta	The Inspector of Police reported that a native lad filled an iron pipe with the mixture and lighted it with a match when it exploded causing hurt to another lad who was standing near by.	...	
26	8th March 1908	Fireworks consisting of sulphur; saltpetre and ihil (small shells).	Palghat	The District Magistrate reported that while the ingredients were being pounded with a wooden pestle in a wooden mortar, an explosion occurred, fatally injuring four people and seriously injuring three others.	4	
27	2nd April 1908	Fireworks	Rampur, Mymensingh.	The Magistrate reported an accident from a firework called "Bombsetar" which consists of a stout frame work of wood often covered with sheets of iron and stuffed with rags, gunpowder and sulphur, charcoal and saltpetre. In the present case the bomb had no covering of iron and when it was ignited by means of fire being put into it, it exploded and burst killing two men.	2	..
28	27th May 1908	Firework consisting of chlorate of potash and sulphide of arsenic.	Calcutta	It appears a native was in the act of preparing a bomb firework and that some violence having been applied to the bomb, it exploded. The man had his left hand practically blown away and received injuries about his body. His son who was near by was slightly injured (Newspaper)	...	
29	10th June 1908	Fireworks	Do.	A native was assisting at a wedding ceremony by letting off fireworks and, in igniting a sky rocket, it exploded, badly injuring his hands.	...	

No.	Date of accident.	Nature of Explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS	
					Killed.	Injured.
Explosives—continued.						
30	15th June 1908 .	Fireworks consisting of chlorate of potash, phosphorus, sulphide of arsenic and sulphur.	Supaul, Bhagalpur.	The Magistrate reported that while a license-holder was manufacturing firework bombs, a bomb exploded and destroyed the house and a part of the bazar.	1	2
31	22nd June 1908 .	Fireworks composition, chlorate of potash and momchal (sulphate of antimony).	Banpur .	The police reported that a native was giving an exhibition of a parrot firing a toy cannon and for the purpose of loading the cannon, he was taking out chlorate of potash and sulphate of antimony, the ingredients used for the purpose from a tin box. The lid of the box was fixed lightly to the box and as he applied some force to open it, the contents exploded severely injuring him.	...	1
32	23rd June 1908 .	Fireworks consisting of chlorate of potash, red arsenic and small stones.	Bombay .	The Commissioner of Police reported that a number of these fireworks were manufactured and placed in tin boxes and whilst lifting one of these a native accidentally let it drop causing an explosion.	2	...
33	August 1908 .	Fireworks .	Jullundur .	The Deputy Commissioner reported that a native woman was making throw down crackers when the potash used in their manufacture exploded and she with another woman and 4 children were so severely burnt that the two women and three of the children died from the effects.	5	1
34	6th Sept, 1908 .	Do. .	Calcutta .	A native was preparing firework bombs consisting of chlorate of potash and sulphide of arsenic when an explosion occurred fortunately without any damage. The man was prosecuted for manufacturing fireworks without a license and fined. (Newspaper).	...	...
35	Sept. 1908 .	Fireworks consisting of chlorate of potash and other ingredients.	Diglur, Aurangabad.	The Inspector General of Police reported that an explosion occurred through carelessness on the part of a native who was making fireworks.	4	1
36	8th Oct. 1908 .	Fireworks consisting of red arsenic and chlorate of potash.	Bombay .	The Commissioner of Police reported that a native, while making these fireworks, accidentally dropped one of them into a mixture of arsenic and potash causing an explosion which fatally injured his wife and seriously injured him.	1	1
37	13th Oct. 1908 .	Fireworks consisting of chlorate of potash and red arsenic.	Do. .	The Commissioner of Police reported that a native was making fireworks and had prepared a small heap of them, which were lying before him in the centre of the room. In the act of tying one of them, it exploded causing the heap in front to explode and inflicting fatal injuries on him and severe injuries on his son.	1	1
38	20th Oct. 1908	Fireworks consisting of chlorate of potash and realgar.	Erambur, South Arcot.	The Magistrate reported that native lads were grinding chlorate of potash and realgar (sulphide of arsenic) together, when there was an explosion seriously injuring one and slightly injuring the other.	...	2
39	25th Oct. 1908 .	Fireworks consisting of chlorate of potash and sulphide of arsenic.	Bombay .	The Commissioner of Police reported that while a native was rubbing between the palm of his hands a number of throw down crackers, they suddenly exploded burning him severely.	...	1
40	25th Oct. 1908 .	Fireworks .	Howrah .	The Magistrate reported that a native lad was playing with a lighted firework. It fell in a firework shop where an open tin of powder and some fireworks were kept for sale. The powder and fireworks caught fire and exploded.	4	2

No.	Date of accident.	Nature of Explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS	
					Killed	Injured
Explosives—concluded.						
41	28th Nov. 1908	Fire works. Throw downs of sulphide of arsenic and chlorate of potash.	Bombay	The Commissioner of Police reported that as a sowar was riding on a foot path his horse's feet struck on some of these fireworks which had been buried, with the result that an explosion occurred burning the horse's legs. It appears a police servant had been directed to place some of these fireworks in a kerosine tin of water but mistaking the order he buried them, but not deep enough.	...	...
42	29th Oct. 1908	Fireworks, Rocket	Calcutta	The Commissioner of Police reported that a fire broke out in a firework shop due to a native lad having thrown a lighted rocket inside.	...	...
43	30th Oct. 1908	Fireworks consisting of bisulphate of arsenic and nitre.	Salem	The Magistrate reported that a native lad had a number of fireworks secured in his waist cloth and in falling down some steps, the fireworks exploded injuring him so severely that he died from the effects.	1	...
44	31st Oct. 1908	Fireworks consisting of red arsenic and chlorate of potash.	Bombay	The Commissioner of Police reported that a native dropped a bowl containing fireworks causing them to explode. No damage was done to property or person.	...	...
45	8th Dec. 1908	Firework composition, chlorate of potash and sulphide of arsenic.	Salem	The Deputy Magistrate reported that a native lad was attempting to open a box containing chlorate of potash and sulphide of arsenic for making crackers. The mixture exploded causing injuries to the lad.	...	1
46	27th Dec. 1908	Fireworks	Sundip, Noakhali	A Sarang of a barge lying at Sundip Ghat got on board a steamer lying near by and tried to set fire to a firework, but as the wick of the firework was somewhat damp he began to blow on it when the firework exploded fatally injuring him and slightly injuring three others.	1	3
					TOTAL	26 23
Petroleum.						
47	12th Feb. 1908	Kerosine	Bombay	The Commissioner of Police reported that a native woman was lying on her bed when a wall-lamp fell on her, setting fire to her clothes and burning her so seriously that she died from the effects.	1	...
48	4th March 1908	Crude oil	Twingon	The Sub-Divisional Officer reported that a fireman having inspected the gauge on a boiler with a lighted torch approached an oil well with the torch in his hand and getting too close to the tanks near the well ignited the gas round the tanks and so started a fire.	...	...
49	12th March 1908	Petrol	Calcutta	At about 7 o'clock at night a cleaner attempted to refill the tank on a motor car with petrol in close proximity to a motor lamp, when the liquid ignited, destroying the body and other parts of the car.	...	...
50	12th March 1908	Do	Do	A native cleaner on his own initiative, refilled a tank on a motor car with petrol in close proximity to a lighted motor lamp, with the result that the spirit ignited. The body of the car and canopy were destroyed, the steering wheel reduced to charcoal and the two front tyres melted by the heat of the flames.	...	...
51	28th March 1908	Kerosine	Do	The Inspector of Police reported that as a native lit a kerosine dibia or lamp, it suddenly exploded setting fire to his clothes, and a woman who attempted to extinguish the fire on the man's clothes was also burnt.	...	...

No.	Date of accident.	Nature of Oil.	Where accident occurred.	Circumstances of accident so far as ascertained	NUMBER OF PERSONS	
					Killed.	Injured.
Petroleum—continued.						
52	29th March 1908	Kerosine .	Jhansi .	A gunner of the Royal Artillery in attempting to extinguish a kerosine oil lamp by blowing down the chimney, caused the oil to catch fire, and the lamp exploded, injuring him fatally (Newspaper).	1	...
53	2nd April 1908	Do. .	Bombay .	The Commissioner of Police reported that while a native was cooking food over an oil stove it flared up and set his clothes on fire, and burned him so severely that he died from the effects.	1	...
54	5th April 1908	Do. .	Do. .	The Commissioner of Police reported that a native child while playing knocked a small kerosine oil lamp over himself and set fire to his clothes. He was burnt so severely that he died from the effects of the injuries received.	1	..
55	13th April 1908 .	Do. .	Trichinopoly .	The District Magistrate reported that a fire occurred in a depôt for the storage of kerosine in tins and cases and that the fire was more or less due to careless soldering. 130 odd cases of oil were destroyed.	..	...
56	16th April 1908 .	Do. .	Serampur .	The District Magistrate reported that a kerosine lamp accidentally fell into a tin of kerosine oil which exploded injuring four boys, three of whom died.	3	1
57	17th April 1908 .	Do. .	Salem .	The District Magistrate reported that a lighted kerosine lamp fell on a native lad and burnt him so severely that he died from the effects.	1	..
58	21st April 1908 .	Petrol .	Narculdanga .	The police reported that at about 8-30 p.m. while the petrol vats in the premises of the Indian Oil Products, Limited, were being cleared of oil, petrol vapour which was issuing must have come in contact with an oil lamp placed outside the roof of the building. The fire instantly spread over the whole building which is principally of iron work.	...	...
59	22nd April 1908 .	Kerosine .	Calicut .	The District Magistrate reported that while a lighter was being loaded with cases of kerosine oil from a steamer, it suddenly took fire. The actual cause of the fire could not be ascertained. It may have been due to the men of the boat keeping a small fire going at the bottom of the boat to warm their food.	...	...
60	23rd April 1908 .	Do. .	Bombay .	The Commissioner of Police reported that a native girl while carrying a lighted kerosine lamp accidentally dropped it and some of the oil falling on her clothes caught fire. She was so severely burnt that she died from the injuries.	1	...
61	28th April 1908 .	Do. .	Ferozepur .	The Deputy Commissioner reported that a native was making a fire for his hooka with a piece of rope. When the rope took fire a lighted piece of it fell from his hand into a canister of oil which was near by, ignited the oil which set his clothes on fire and injured him so severely that he died from the effects.	1	...
62	April 1908	Do. .	Kandawgalay, Burma.	A lighted kerosine oil lamp left on the floor of a house was knocked over by a little child, who received severe burns and died from the effects.	1	...
63	21st May 1908 .	Do. .	Bangalore .	A large hanging lamp, hanging from the roof over the stage of the Bowring Institute, suddenly fell on the stage, causing an explosion and the bursting of the reservoir. (Newspaper).	...	...

No.	Date of accident	Nature of Oil.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS	
					Killed	Injured
Petroleum—continued.						
64	21st May 1908	Kerosine	Karachi	73 out of 75 huts in a serai camp in the Translyari quarter were destroyed by fire owing to a woman using kerosine oil to light a fire to cook food. (Newspaper).	...	
65	May.	Do.	Haripal	The District Magistrate reported that a lighted kerosine lantern was found to be full of oil and a native in attempting to pour some oil from the lantern into a canister accidentally let the lamp fall into the canister of oil which caught fire and caused fatal injuries to two persons.	2	
66	May 1908.	Do.	Bankipur	A fire broke out in a house of a native resulting in the death of five persons due to a tin of kerosine catching fire at the time it was being opened. (Newspaper).	5	
67	5th June 1908	Do.	Bombay	The Commissioner of Police reported that a native woman died from the effects of burns all over her body due to a kerosine oil lamp having been upset over her.	1	
68	12th June 1908	Petrol	Bombay Harbour	A barge laden with 3,600 drums of petrol left the S.S. <i>Singu</i> at 4-30 P.M. on the 11th under police supervision and as it left too late to reach its destination and discharge before sunset, it proceeded up the harbour and anchored off Jackeria Bunder. Before the boat left the steamer all the crew were searched. At 3 A.M. on the 12th the constable and crew who were on board were awakened by an explosion and jumped overboard, and found that the <i>Tindal</i> was missing. His remains were found later on the barge, the Police Constable and all the crew were burnt and injured. Two of the crew died from their injuries. It is presumed that the explosion was due to the <i>Tindal</i> lighting a match.	3	
69	13th June 1908	Kerosine	Calcutta	A native girl accidentally dropped a kerosine lamp which set fire to her clothes, she was so severely burnt that she died from the injuries. (Newspaper.)	1	
70	15th June 1908	Petrol	Syriam	Flames from the after part of a cargo boat, laden with 2,517 drums of petrol were noticed by a durwan who was on board at the time and in a short while the whole boat was enveloped in flames and every now and then an explosion was heard and burning petrol drums were shot into the air. The fire probably originated by one of the men having gone down below to cook food.	...	
71	19th June 1908 and 20th June 1908.	Earth oil	Wetmasut, Yenangyang.	Earth oil was leaking from a key hole or gate of the pipe line of the Burma Oil Company, and it is believed that a native must have lit a match or placed a light near by to find out the point of leakage. A similar fire occurred on the day after (20th June) at the same place.	...	
72	June 1908	Kerosine	Calcutta	A native woman upset a lighted kerosine lamp and was so severely burnt that she died from the injuries. (Newspaper.)	1	
73	15th Aug. 1908	Earth oil	Magwe	The Deputy Commissioner reported that a native took a lighted lamp under some oil that was being poured out from one tin to another. The oil suddenly ignited and the tins of oil exploded burning two men, one of whom died from the injuries.	1	

No	Date of accident.	Nature of Oil.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS	
					Killed.	Injured.
Petroleum—continued.						
74	5th Sept. 1908 .	Petrol . . .	Bombay . . .	The Commissioner of Police reported that a native was found dead against the bulwarks of No. 4 pocket of the S. S. <i>Beme</i> lying in the harbour. In the pocket there must have been an accumulation of petrol gas and the cause of the man's death was no doubt due to the gas overcoming him.	1	...
75	6th Sept. 1908 .	Do. . . .	Do. . . .	The Commissioner of Police reported that about 9 P.M. a car had been placed in the garage and its driver was ordered to take petrol to a car stranded in Hornby Road for want of spirit, and to bring it back and place it in the garage. On his return he found the car previously brought in in a blaze as well as another one in front of it. The woodwork of the building also caught fire, but it was soon extinguished. No cause could be assigned for the outbreak, but it appeared that, when the first car was brought in, the lamps were burning, and it was the duty of the watchman to put them out. He was in possession of a lantern with which he went his rounds. When putting out the lamps he may have placed the lantern near the carburetor igniting the gas that may have been about.	...	...
76	21st Oct. 1908 .	Kerosine . .	Do. . . .	A Mahomedan while fanning his food, accidentally knocked over a lighted kerosine oil lamp which set fire to his clothes. He was so severely burnt that he died from the effects.	1	...
77	22nd Oct. 1908 .	Do. . . .	Do. . . .	The Commissioner of Police reported that a leakage of oil from the pipe line, connecting the pumping station at Stone Bunder with the bulk oil installations, percolated through the soil, and found its way into the Bunder Basin through a small underground drain and collected in pools. At 8 P.M. a fire occurred in the Bunder, and it is surmised that careless biddie smoking caused the fire.	...	...
78	25th Oct. 1908 .	Do. . . .	Do. . . .	The Commissioner of Police reported that owing to leakage of kerosine from a pipe line belonging to the Bombay Port Trust, a fire occurred at Tank Bunder. The oil found its way to timber ponds, through a covered drain and collected in pools near the opening of the drain and also floated on the water. A coolie, whilst collecting the oil, lit a biddie and apparently threw the lighted match into the oil which at once ignited severely burning him about the body.	...	1
79	2nd Nov. 1908 .	Do. . . .	Do. . . .	The Commissioner of Police reported that a native woman was sitting in her room beneath a lamp on the wall. In getting up she accidentally knocked against the lamp, causing it to fall. It set fire to her clothes and burnt her so severely that she died from the effects.	1	...
80	16th Nov. 1908 .	Do. . . .	Do. . . .	The Commissioner of Police reported that a native lad was warming himself in front of a grass fire, when a native poured some kerosine oil on the fire in front of where the lad was seated, with the result that the flames set his clothes on fire and burnt him so severely that he died from the effects.	1	...
81	18th Nov. 1908 .	Do. . . .	Do. . . .	The Commissioner of Police reported that a native child was playing near a naked kerosine oil lamp, when his clothes accidentally caught fire and his right arm was burnt.	...	1

No.	Date of accident.	Nature of Oil.	Where accident occurred	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS	
					Killed.	Injured
Petroleum—concluded.						
82	19th Nov. 1908	Kerosine	Bangalore	A demented Eurasian woman locked herself up in a room, and after saturating her clothes with kerosine oil set fire to them and was burnt to death before her neighbours could break open the door to save her. (Newspaper.)	1	...
83	21st Nov. 1908	Do.	Bombay	The Commissioner of Police reported that a native lad received fatal injuries from burns by a kerosine lamp upsetting over him.	1	...
84	1st Dec. 1908	Liquid fuel	Twingon	The Government of Burma reported that a small liquid fuel tank of the Nathsingh Oil Co. caught fire due to the carelessness of a coolie who allowed a lighted faggot to come in contact with the valve of the pipe which conveys oil from the fuel tank to the furnace. A few drops of oil were escaping from the valve.	...	...
85	19th Dec. 1908	Do.	Paunggodaw, Burma.	The Township Officer, Yenangyang, reported that two men had cleaned the boiler at the Nathsingh Oil Co.'s water pumping station, and afterwards one of them picked up an iron rod wrapped with a rag at one end from near a pot of oil which was burning. The rag was apparently smouldering and he dipped it into the fuel tank intending to make a fire in the furnace of the boiler, when the oil in the tank immediately ignited.	...	...
86	21st Dec. 1908	Petroleum	Digboi	The General Manager, Assam Oil Co., reported that about 4 p.m. a sudden explosion occurred followed by all the oil round the Derrick at the well catching fire together with that which had and was still flowing into a tank alongside the well. It is presumed that a spark from the chimney of a boiler 164 feet away from the well ignited the gas from the oil. This accident was made the subject of a special report to the Local Government by the Chief Inspector of Explosives.	6	...
87	31st Dec. 1908	Petrol	Bombay	The Commissioner of Police reported that a fire broke out in a petrol store about 7 p.m. A servant was sent to fetch some petrol and he went there with a light which apparently caused the fire, as shortly after flames and smoke was noticed issuing from the store.	...	...
TOTAL					37	6
Chemicals.						
88	3rd June 1908	Spirits of wine	Bombay	The Commissioner of Police reported that a native in attempting to light a spirit stove to heat water, turned the wick up too high with the result that when the match was applied a flame burst out and burnt the man. A second man attempted to extinguish the stove, but not understanding the mechanism accidentally released the tap and this also caught fire and burnt this man as well.	...	2
89	4th June 1908	Carbolic acid	Calcutta	A Hindu lad was admitted into the Medical College Hospital suffering from severe burns all over his body, caused by carbolic acid thrown upon him by another boy who is said to have had a grudge against him. (Newspaper.)	...	1
90	10th June 1908	Nitric acid	Do.	A jemadar was asleep in a part of a stable company's premises where some phials were hanging from nails in the wall. One of these which contained nitric acid, got dislodged and fell on his body causing severe burns. (Newspaper.)	...	1

No.	Date of accident.	Nature of chemical.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS	
					Killed.	Injured.
Chemicals—continued.						
91	June 1908	Nitric acid	Beliaghata	A native in his desire to wreak his vengeance on a rival threw some nitric acid on him causing severe burns. He was sentenced to two years rigorous imprisonment. (Newspaper.)	...	1
92	15th Oct. 1908	Acids	Madras	The Agent, South Indian Railway Company, reported that after a train started from Egmore Station, smoke was seen rising from the doorway of one of the compartments of a powder van, and on examination it was found to be due to sulphuric acid which leaked out due to a defective stopper.	...	...
93	6th Nov. 1908	Nitric acid	Calcutta	The Commissioner of Police reported that while a native was carrying a box containing bottles of nitric acid on his head, one of the bottles either broke or the cork came out and the acid leaked through causing injuries.	...	1
TOTAL					...	6
Miscellaneous.						
94	27th Mar. 1908	Gas	Calcutta	The Commissioner of Police reported that while a European Engineer was attending to something on the top of a cylinder of gas erected midship of the lightship <i>Planet</i> an explosion occurred resulting in the blowing up of the ship. The wreck sank immediately, and the Engineer and khalasi, who were the only two on board, were killed.	2	...
95	5th Aug. 1908	Do.	Bombay	The Commissioner of Police reported that a fire occurred at a printing press. The building was lighted by a gas system in which copper cylinders are used and during the fire one of these containing oil and compressed gas, exploded under the intense heat with the result that a portion of the blazing roof was lifted into the air.	...	1
96	28th Aug. 1908	Ships, lights and signals, tridges, hose, etc.	Between Busrah and Karachi	At about 1-25 P.M. a servant on board the S.S. <i>Kasara</i> noticed some smoke coming out of the Chief Officer's store-room. He called another servant and brought water to put out the fire. On opening the door an explosion took place wrecking the room and injuring seven persons. The cause of the explosion was presumed to have been due to carbide of calcium contained in Holme's lights coming in contact with water.	...	7
97	21st Sept 1908	Matches, etc.	Kumbakonam	The Agent, South Indian Railway Company, reported that while seven cases supposed to contain matches were being unloaded, one of them burst with a loud report and catching fire was completely destroyed, on six cases being opened they were found to contain percussion caps, magic wire, star matches and non-safety Congreve matches.	...	...
98	15th Oct. 1908	Coloured matches.	Coimbatore	The Agent, South Indian Railway Company, reported that while a case of coloured matches was being unloaded from a railway wagon it caught fire through spontaneous combustion and was completely destroyed.	...	...
TOTAL					2	8

Summary of accidents during the year 1908.

Summary of accidents during 1917					
Explosives or dangerous and inflammable substances.	ACCIDENTS CAUSING LOSS OF LIFE AND BODILY INJURY.			Accidents not causing loss of life or bodily injury.	Total number of accidents.
	Number of accidents.	Number of persons			
		Killed.	Injured.		
EXPLOSIVES.					
Gunpowder	19	27	64	...	19
Nitro-compounds	4	1	4	...	4
Ammunition	1	...	1	...	1
Fireworks	18	26	23	4	22
TOTAL	42	54	92	4	46
PETROLEUM.					
Petroleum generally	25	37	6	16	41
TOTAL	25	37	6	16	41
CHEMICALS	5	...	6	1	6
TOTAL	5	...	6	1	6
MISCELLANEOUS	3	2	8	2	5
TOTAL	3	2	8	2	5
GRAND TOTAL	75	93	112	23	98

21 APPENDIX D.

Detailed statement showing the number of accidents and persons killed and injured during the five years 1904 to 1908.

YEAR.	GUNPOWDER.			DYNAMITE AND OTHER NITRO COMPOUND BLASTING EXPLOSIVES.			AMMUNITION.			FIREWORKS.		
	No. of accidents.	Persons killed.	Persons injured.	No. of accidents.	Persons killed.	Persons injured.	No. of accidents.	Persons killed.	Persons injured.	No. of accidents.	Persons killed.	Persons injured.
1904	11	25	30	5	3	10	1	...	1	13	10	9
1905	7	6	3	10	6	19	...	...	...	15	13	26
1906	13	21	28	2	1	2	...	...	...	11	4	14
1907	11	18	20	4	...	6	3	...	4	19	12	20
1908	19	27	64	4	1	4	1	...	1	22	26	23
TOTAL	61	97	145	25	11	41	5	...	6	80	65	92
AVERAGE	12	19	29	5	2	8	1	...	1	16	13	18

YEAR.	PETROLEUM.			CHEMICALS.			MISCELLANEOUS.		
	No. of accidents.	Persons killed.	Persons injured.	No. of accidents.	Persons killed.	Persons injured.	No. of accidents.	Persons killed.	Persons injured.
1904	8	42	10	4	...	9	5	...	1
1905	12	7	13	...	...	...	...	...	...
1906	10	9	3	...	...	...	3	1	1
1907	15	9	8	...	...	...	6	7	2
1908	41	37	6	6	...	6	5	2	8
TOTAL	86	104	40	10	...	15	19	10	12
AVERAGE	17	21	8	2	...	3	4	2	2

APPENDIX E.

Comparative statement showing the number of accidents and persons killed and injured during the five years 1904 to 1908.

YEAR.	ACCIDENTS CAUSING LOSS OF LIFE OR BODILY INJURY.			Accident not causing loss of life or bodily injury.	Total number of accidents.	
	Number of accidents.	Number of persons.				
		Killed.	Injured.			
1904	40	80	70	7	47	Gunpowder, b
1905	40	32	61	4	44	Gunpowder, Ammonal Dynamite
1906	34	36	48	5	39	Blasting (C Gelignite Monobel
1907	50	46	60	8	58	Other m Detona
1908	75	93	112	23	98	Firewo
TOTAL	239	287	351	47	286	
AVERAGE	48	57	70	9	57	

APPENDIX F.

Statement showing the imports of explosives by sea into British India from other countries in the year 1908.

	IMPORTS IN 1908.						
	Bengal	Bombay.	Sind.	Madras	Burma.	Eastern Bengal and Assam.	TOTAL.
QUANTITY.							
Gunpowder, black lbs.	97,756	124,607	1,000	27,640	5,750	...	256,753
Gunpowder, smokeless . . . "	1,975	3,400	29,835	1,555	850	...	37,615
Ammonal . . . . "	...	...	...	...	250	...	250
Dynamite "	190,064	50,000	14,470	76,000	19,940	...	350,474
Blasting Gelatine "	9,856	...	...	697,000	19,940	...	726,796
Selignite or Gelatine Dynamite . "	9,968	60,000	...	93,000	2,240	...	165,208
Monobel Powder . . . . "	...	...	...	...	...	...	...
Other nitro-compound explosives . "	77,616	...	...	...	...	...	77,616
Detonators No.	...	180,000	50,000	2,725,000	107,000	...	3,062,000
Fireworks lbs.	...	1,381,108	18,287	36,602	68,899	...	1,504,896
TOTAL . lbs.	387,235	1,619,115	63,592	931,797	117,869	...	3,119,008
TOTAL No.	...	180,000	50,000	2,725,000	107,000	...	3,0620
VALUE IN RUPEES.							
Gunpowder, black	53,724	64,237	375	12,703	6,836	...	1,67,875
Gunpowder, smokeless . . .	6,019	12,240	44,919	3,950	2,693	...	69,821
Ammonal . . . .	...	...	...	...	113	...	113
Dynamite	1,52,981	39,753	5,493	65,220	16,569	...	2,80,016
Blasting Gelatine	10,367	...	...	6,57,782	21,121	...	6,89,270
Selignite or Gelatine Dynamite .	8,104	47,697	...	73,634	2,581	...	1,32,016
Monobel Powder . . . .	...	...	...	...	...	...	...
Other nitro-compound explosives .	47,965	...	...	...	...	...	47,965
Detonators	8,324	3,442	1,521	64,397	1,472	...	79,156
Fireworks	27,021	2,71,977	15,959	21,418	22,040	...	3,58,425
TOTAL . Rs.	3,44,505	4,39,346	68,277	6,99,104	73,425	...	18,24,657

APPENDIX G.

Comparative statement showing the import of explosives by sea into British India from other countries during the five years 1904 to 1908.

	1904.	1905.	1906.	1907.	1908.
Gunpowder, black lbs.	473,925	202,751	168,353	170,299	256,753
Gunpowder, smokeless "	48,246	45,125	39,745	29,317	37,615
Ammonal . . . . . "	...	...	...	...	250
Dynamite "	149,968	249,968	352,207	262,495	350,474
Blasting Gelatine "	895,040	558,200	906,400	1,085,050	726,796
Gelignite or Gelatine Dynamite "	55,048	123,048	132,594	175,040	165,208
Monobel Powder . . . . . "	...	...	2,000	...	...
Other nitro-compound explosives "	130,811	109,475	72,921	89,256	77,616
Detonators No.	3,020,000	1,797,000	5,536,000	3,052,400	3,062,000
Fireworks lbs.	2,264,162	1,661,229	2,410,388	2,446,428	1,504,8
TOTAL . lbs.	4,017,200	2,949,796	4,084,608	4,257,885	3,119,608
TOTAL . No.	3,020,000	1,797,000	5,536,000	3,052,400	3,062,000

APPENDIX H.

Statement showing the quantity of petroleum imported by sea into British India during the years 1905 to 1908.

Non-dangerous petroleum.

	1905.	1906.	1907.	1908.
	Gallons.	Gallons.	Gallons.	Gallons.
Chittagong	3,970,269	1,822,051	5,547,944	6,308,806
Balasore	10,000	26,200	...	...
Chandbali	367,500	405,000	270,200	206,150
Calcutta	27,144,014	20,342,078	27,342,923	33,379,196
Bombay	22,099,928	17,402,913	22,439,071	24,750,034
Sind	5,157,947	5,007,932	7,171,933	10,448,574
Madras	9,765,384	6,956,459	8,942,869	13,018,601
Burma	1,595,209	1,156,179	1,828,973	2,514,834
TOTAL	70,110,251	53,118,812	73,543,913	90,626,195

Dangerous petroleum.

	1905.	1906.	1907.	1908.
	Gallons.	Gallons.	Gallons.	Gallons.
Chittagong . . . . .	...	...	...	...
Balasore . . . . .	...	...	...	...
Chandbali . . . . .	...	...	...	...
Calcutta	14,500	...	12,270	20,048
Bombay	66,017	184,243	92,258	110,390
Sind	622	9,795	2,733	25,801
Madras	7,828	88,104	25,400	53,756
Burma . . . . .	...	...	...	...
TOTAL	88,972	232,142	132,661	209,995

Statement showing the quantity of petroleum produced in Assam and Burma during the years 1905 to 1908.

Non-dangerous petroleum					Dangerous petroleum.				
	1905.	1906.	1907.	1908.		1905.	1906.	1907.	1908.
	Gallons.	Gallons.	Gallons.	Gallons.		Gallons.	Gallons.	Gallons.	Gallons.
Assam	1,543,212	1,890,942	1,975,094	2,016,978	Assam	21,014	21,855	48,017	67,256
Burma	67,062,170	95,848,500	75,397,762	78,044,435	Burma	11,988,220	11,670,200	15,043,700	18,055,500
TOTAL	68,605,382	97,739,442	77,372,856	80,061,413	TOTAL	12,009,234	11,692,055	15,091,717	18,122,756

APPENDIX I.

No. 6123-17

GOVERNMENT OF INDIA.

DEPARTMENT OF COMMERCE AND INDUSTRY.

EXPLOSIVES.

Simla, the 30th June 1908.

NOTIFICATION.

In exercise of the powers conferred by Section 5 of the Indian Explosives Act, 1884 (IV of 1884), the Governor General in Council is pleased to make the following amendments in the rules to regulate the transport and importation of explosives published with the notification in this Department, No. 4555-4 (Explosives), dated the 31st May 1907 :—

In schedule A under the heading "Materials required. (a) Test-paper :"

- (1) the words and figures "weighing, air-dry, about 6'5 grammes per 100 square inches" shall be omitted ;
- (2) for the word "cork" the word "corked" shall be substituted.

B. ROBERTSON,

Secretary to the Government of India.

APPENDIX J.

DEPARTMENT OF EXPLOSIVES

NOTIFICATION.

Dated Calcutta, the 2nd March 1909.

No 476.—With reference to Notification No. 4555-4, dated the 31st May 1907, of the Government of India, Department of Commerce and Industry, publishing rules to regulate the transport and importation of explosives, the following list of "authorized explosives" referred to in rule 9 (r) of the above rules is published for general information:—

LIST OF AUTHORIZED EXPLOSIVES.

The following explosives are at present authorized for importation into British India for general sale:—

Class 1.—GUNPOWDER

GUNPOWDER.

Class 2.—NITRATE MIXTURE.

AMMONAL.

CHILWORTH SPECIAL POWDER.

Class 3.—NITRO-COMPOUND.

Every explosive in this class and every explosive ingredient thereof shall be so thoroughly purified and otherwise of such character as to satisfy a test known as the heat test, and specified in the rule for testing explosives, published with Notification, No 4555-4, dated the 31st May 1907, referred to above.

Division 1.

ALBIONITE.

BALLISTITE.

BLASTING GELATINE.

CARBONITE.

CELTITE.

CORDITE.

CORDITE, M. D.

DYNAMITE.

GELATINE DYNAMITE NO. 1.

GELATINE DYNAMITE NO. 2 OR GELIGNITE.

MONOBEL POWDER.

PHENIX POWDER.

Provided that every explosive in this division shall be of such character and consistency as not to be liable to liquefaction or exudation.

Division 2.

AMBERITE NO. 2.

COOPAL'S POWDER.

E. C. SPORTING POWDER.

EMPIRE POWDER.

GUNCOTTON.

HENRITE.

IMPERIAL SCHULTZE GUNPOWDER.

NEGRO POWDER.

PICRIC ACID.

PICRIC POWDER.
ROBURITE.
SMOKELESS DIAMOND.
TONITE.

Class 4.—CHLORATE MIXTURE
Nil.

Class 5.—FULMINATE.
Nil.

Class 6.—AMMUNITION.
Division 1.

PERCUSSION CAPS.
RAILWAY FOG SIGNALS
SAFETY CARTRIDGES.
SAFETY FUZES FOR BLASTING.
SAFETY ELECTRIC FUZES.

Division 2.

CARTRIDGES FOR CANNON, SHELLS, MINES, BLASTING OR OTHER LIKE PURPOSES.
CARTRIDGES FOR SMALL ARMS WHICH ARE NOT SAFETY CARTRIDGES.
ELECTRIC FUZES.
FUZES FOR SHELLS.
TUBES FOR FIRING EXPLOSIVES.
WAR ROCKETS.

Division 3.

CARTRIDGES FOR SMALL ARMS WHICH ARE NOT SAFETY CARTRIDGES.
DETONATORS.
ELECTRIC DETONATORS.
FRICTION TUBES.
FUZES FOR SHELLS.
TUBES FOR FIRING EXPLOSIVES

Class 7.—FIREWORK.

Division 1.
Nil.

Division 2.—Manufactured Fireworks.

MANUFACTURED FIREWORKS.
ALUMINIUM TORCHES.
AMORCES.
CHINESE CRACKERS.
ELECTRIC SPARKLERS.
MAGNESIUM TORCHES.

C. A. MUSPRATT-WILLIAMS, Major, R. A.,
Chief Inspector of Explosives in India.

